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THE IMPLICATIONS OF PARAPSYCHOLOGY FOR GENERAL PSYCHOLOGY¹

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The subject with which I have been asked to deal in this paper is one that has always intrigued me since I first served as guinea pig in some of McDougall's early experiments; namely, what implications, if any, are to be drawn from the results of parapsychological research for the outstanding problems of general psychology. General psychologists will no doubt be tempted to protest, in the words of one of my colleagues, that this is like asking, "To what extent can the tail wag the dog?" If so, let me recall Captain Kettle's rejoinder to a similar objection: "The tail of your dog, sir, is like the rudder of a ship; and a very small rudder may sometimes change the course of a very big vessel."

The question itself assumes that we are already agreed on the answer to a previous question which it plainly implies: What precisely are the results which parapsychological research has in fact achieved? For our present purpose we may provisionally sum them up under six main heads. First, there is strong experimental evidence to show that under certain conditions (at present rather obscure) something that for convenience may be called telepathy does in fact occur between two or more persons. Second, there is similar evidence, not quite so extensive, in favor of what is termed

¹ This paper by Sir Cyril Burt (slightly revised and amplified) was contributed to the Winter Review Meeting held at the Institute for Parapsychology, Durham, N. C., December 29-30, 1966.—Ed.

clairvoyance. Third, evidence drawn from so-called "spontaneous" experiences, largely confirmed by experimental results, suggests the possibility of something very like precognition. Fourth, evidence, far more meager and almost wholly anecdotal, suggests the possibility of retrocognition, and under this heading I would include most—though not all—of the best-authenticated instances of apparitions and ghosts. Fifth, there is some slight experimental evidence, not as yet very convincing, in favor of psychokinesis. Lastly, the evidence from so-called cross-correspondences as well as from various mediumistic utterances—such as those of Mrs. Piper and more recently of Miss Cummins—goes far to support the theory of communications from the dead; but here there are, as I read the records, too many vents and loopholes for the evidence to be accepted as conclusive. In this brief summary, starting from the viewpoint of the impartial outsider, I have deliberately retained the traditional classification and the traditional labels, though, as will be seen in a moment, I hold them to be rather misleading. Nor do I wish to stress the order suggested. Save for the last item, it is primarily the historical order in which the various concepts have been selected for systematic study; and the actual evidential order must necessarily vary with the successive stages of research.

In what ways, then, do these ostensible results (14) bear on the current problems and theories of the general psychologist? In general psychology (so far as I can judge from articles and textbooks which have recently appeared on either side of the Atlantic) the prevailing standpoint is still that of the neo-behaviorist school. Its most explicit, if not its most extreme, representative is, I suppose, Prof. Skinner, who has on more than one occasion bluntly dismissed the findings of parapsychology as inconsistent with the theories he himself has so brilliantly championed. In Britain the most recent and most uncompromising exponent of this view is Prof. Hansel. Now it is, I think, significant that their grounds for this repudiation are based, not on any first-hand experimental work of their own in the field of parapsychology, or even on any impartial examination of the actual evidence, but almost entirely on general *a priori* arguments: "The whole body of scientific knowledge," says Prof. Hansel, "compels us to assume that such things as telepa-

thy and clairvoyance are impossible. If therefore the statistical data rule out explanations in terms of chance, then the results can only be accounted for by some kind of trick" (11). The reasoning is obviously as circular as the "logic" of Tweedledee: "If it were so, it might be; but as it isn't, it ain't." Dr. Willis, in supporting Prof. Hansel, thinks "the whole argument can be put in a nutshell: the conclusions advanced by parapsychologists would be utterly incompatible with the cardinal assumptions on which present-day psychology rests; hence present-day psychology, if it is to remain a science, cannot possibly accept these alleged supernatural manifestations at their face value, much less subscribe to the unscientific speculations put forward to account for them." But plainly this "argument from incompatibility" is a two-edged weapon which cuts both ways: it would equally imply that the "conclusions of parapsychologists," once they are solidly established, would inevitably introduce a radical change in the assumptions on which present-day psychology is said to be founded.

The fact that I have here taken Prof. Hansel as spokesman does not mean that British psychologists would regard him as the most authoritative exponent of behaviorism in this country or the most representative critic of parapsychology. At the moment of writing, however, his book is the latest British pronouncement on the subject; and, as reviews and letters in the *New Scientist* and other periodicals plainly show, his various statements put into clear-cut terms the tacit opinions of a large number of British scientists and psychologists—indeed, so one informant assures me, of the vast majority. The difficulty, of course, is to get the general psychologist to make a frank and unbiased study of all the detailed evidence. In two cases, however, the work of the Society for Psychical Research has already influenced the trend of British psychology. It was very largely as a result of the work of Gurney (a qualified physician) that hypnotism came to be accepted as a genuine phenomenon; and a little later it was the widespread interest aroused by Myers' concept of the subliminal self that prepared leading British psychologists at the beginning of the present century to lend a sympathetic ear to the psychoanalytic doctrines of the unconscious.

What, then, are these "cardinal assumptions" on which con-

temporary psychologists lay so much stress? Dr. McLeish, in his recent textbook *The Science of Behaviour* (12), takes his stand on what he calls the "structural reflexology as set forth in the writings of Pavlov and Watson," which, as he puts it, "rules out all types of magical or supernatural phenomena." But perhaps the critic who has exercised the greatest influence on recent British psychology has been Prof. Gilbert Ryle, who, in his *Concept of Mind*, has (we are told) "exorcised once and for all the myth of the 'ghost in the machine,' and thus relieved us of the superstitious fantasies still popularized by self-styled psychical research." Indeed, from the constant protests of his various followers one gathers that Ryle's talk of "ghosts" and "Cartesian spectres" seems to have set up a positive psychophobia in the minds of the younger generation. They seem far more terrified at the thought of possessing an immortal soul than their ancestors were of losing it; and in reputable journals all sorts of circumlocution have now to be adopted to avoid even mentioning such eerie words as "mind," "consciousness," "feeling," "sensation," or the like.

For a more detailed statement of the "cardinal assumptions" and their bearing on parapsychology, we may perhaps turn once again to the writings of Prof. Hansel. "If," he says, "psychology is to retain its place as a scientific discipline, it must conform to the basic requirements of all natural science"—requirements which he insists are not *mere* postulates, but are fully corroborated by psychological and neurological research. As he states them, they consist of four generalizations which "run in pairs." (1*a*) All events are causally dependent on preceding events in the physical world of space and time, never on any future event. (1*b*) This causal dependence is rigidly determined in exact accordance with the "laws of mechanics"; i.e., there must be a mechanical chain of causation, with no discontinuity in either space or time, connecting the preceding event or "cause" with the later dependent event or "effect." (2*a*) All mental processes are generated and determined by material processes in the brain or nervous system of the person who experiences them. (2*b*) The only way in which one person can convey information to another is by material means, that is, by moving his own material body (as in gesture, speech, facial expression, and the

like) and thus transmitting physical energy to the sensory organs (eye, ear, or skin) on the surface of the other person's body, and so to his brain (10).²

Now, if the apparent results of parapsychology were firmly established, they would plainly refute each of these several assumptions. The first would be disproved by precognition, the second by psychokinesis; while telepathy, clairvoyance, and retrocognition would all be incompatible with the last three. These principles will thus serve to pinpoint what are popularly supposed to be the distinguishing characteristics of paranormal experiences as contrasted with normal experiences: they are (1) transtemporal, (2) transpatial, (3) transphysical, and (4) transpersonal. We cannot, of course, claim that the evidence from parapsychology is already sufficiently decisive to furnish a complete rebuttal; but it does set up a strong presumption against these so-called postulates. And I myself would hold that many of the undeniable facts of general psychology, when frankly faced, provide additional evidence in the same direction.

It will be noted that the four postulates presuppose what Edington has called the Newtonian conception of the universe: they assume absolute time and absolute space, and exact causal laws reducible in essence to those of mechanics. This highly attractive conception was based primarily on the study of mesoscopic or man-sized phenomena; i.e., on processes which could be manipulated by human hands and observed by human eyes, supplemented by such instruments as the microscope and telescope. It was, in fact, the model-universe delineated in systematic detail by Tait and Kelvin in their famous *Treatise on Natural Philosophy*. This simplified scheme works perfectly well so long as we are dealing with the familiar phenomena of ordinary life, in which the smallest conceivable particle is the atom, and which obey the familiar laws of motion. It is therefore adequate to describe all the ordinary overt actions of the human body. But today no physicist or physiologist

² Much the same four "basic limiting principles" (formulated with somewhat greater precision and detail) have already been put forward by Prof. Broad as "forming the framework within which the scientific theories of contemporary industrial civilizations are confined" (2, pp. 9-11). Prof. Hansel, however, states that his formulation was reached quite independently and was intended to represent the current views of most present-day psychologists.

would regard them as "fundamental requirements of all natural science." Einstein's theory of relativity has abolished absolute time and space; quantum theory with its principle of indeterminacy has substituted probabilistic laws for exact causal laws; nuclear research has revealed many kinds of interaction unknown to physicists at the turn of the century; while both Einstein and Heisenberg insist that the conscious observer can no longer be omitted from an exact description of what any scientific observation entails. Above all, the crucial processes in the brain—the transmission of nervous impulses—takes place at the synaptic knobs, which are so minute that we have every reason to suppose that they must be governed, not by the laws which (according to the writers I have just quoted) contemporary psychologists "tacitly and almost unanimously adopt"; i.e., the laws of mesoscopic processes, but by the laws of quantum theory. This modernized view is accepted and emphasized by Sir John Eccles, who is, I suppose, the foremost neurologist of the present day. Eccles, indeed, regards the brain, not as a generator of mind or consciousness, but rather as a detector of extraneous influences, such as those we commonly refer to as mind or will (8, pp. 261-86; 9).

This, as I have argued elsewhere (4, pp. 66-71), suggests a possible interpretation of many of the more puzzling findings of parapsychology. If, for example, we adopt, as many present-day physicists are inclined to do, a relational theory of space and either a multidimensional theory of time or the possibility of time-reversal, then telepathy, clairvoyance, and precognition no longer appear so wildly anomalous. The detector hypothesis itself seems to imply something akin to psychokinesis. In particular it might be urged that we no longer need to draw any sharp distinction between mental processes and physical.

An early hint of a theory along these lines was put forward by Hans Berger, who, it may be remembered, was the first to record what he termed the *Elektrenkephalogram*. As a result of his own personal experiences and of experiments with his students, Berger was fully convinced that "the parapsychological phenomenon of *Gedankenübertragung* between one brain and another must be recognized as fact." He at first supposed that the "electrical waves" he

had detected might operate as a kind of mental radio. He quickly saw that such a notion was untenable, and suggested instead that the reduction of electrical manifestations during visual perception and other attentive states resulted from a conversion of electrical energy into a hitherto unrecognized "psychical energy," which could be propagated across space and interact with the electrochemical processes of the recipient's brain by a kind of "telekinesis" (psychokinesis operating at a distance) (1). Still more recently, and quite independently, an eminent physicist, Mr. H. A. C. Dobbs, has developed a somewhat analogous theory in more up-to-date terms. "In the EEG record," he says, "the oscillations of potential may be regarded as manifestations of charged particles of mathematically *real* mass"; but in addition to these he supposes there are also "particles of mathematically *imaginary* energy or mass" which he calls "psitrons." They travel with a velocity exceeding that of light, and "interact with particles of real mass in a recipient's brain," so conveying information. Such a mechanism would explain "the comparative immunity of ESP to distance and to screening by a Faraday cage." Pre- and retro-cognition he interprets in terms of a two-dimensional time, a conception which is in keeping with the views of certain Russian quantum physicists, who postulate a "complex" time-variable (6). These ingenious hypotheses entail several corollaries for experimental verification by suitably planned researches. An obvious suggestion would be a systematic study of the simultaneous EEG's of identical twins, when one is stimulated and the other is at rest, in order to see whether, as Alice observed, Tweedledum almost always says "Ditto" to Tweedledee.⁸

These semi-physical theories are, as their authors acknowledge, highly speculative, and perhaps could hardly be accepted just as they stand. I for one would prefer a model based on the concept of a psychical "field" rather than of psychical particles or waves. But,

⁸ In the course of our studies of monozygotic twins (reported elsewhere) and influenced largely by Dr. Grey Walter's findings (17, p. 151), Miss Conway and Mr. C. R. King made a number of EEG records for those who were able to visit our laboratory, and incidentally attempted simultaneous recordings for a pair of twins who appeared to be mutually telepathic, but without any conclusive results. Dr. J. B. Rhine kindly draws my attention to a brief account of a more elaborate study carried out at Jefferson Medical College, Philadelphia, by T. D. Duane and T. Behrendt (7); but the report is not sufficiently detailed for the reader to decide how much weight should be attached to the conclusions drawn.

so far as their essential features are concerned, they serve to bring into clear relief two important points which have a manifest bearing on the problems of general psychology. First, they emphasize that, over and above the more familiar types of physical agency which behaviorists and non-behaviorists agree in postulating, we are forced to recognize certain psychical agencies, whether these be waves, particles, fields, or some other vehicle of interaction. Secondly, they indicate that, in postulating agencies that are specifically psychical, we are not in fact straying beyond the legitimate bounds of natural science.

Nevertheless, they still leave on one side what is surely the crucial aspect of the whole problem; namely, the epistemological aspect as distinct from the causal or conditional. They ignore, or take silently for granted, the one thing that is really vital—I mean the actual fact of consciousness. Both extrasensory perception and normal sensory perception are cognitive processes, modes of consciousness in the narrower sense of *direct awareness*. For a theory of thoroughgoing materialism, such as that of Prof. Hansel or Dr. McLeish, what would be in their own phrase “an incredible and inexplicable miracle” is not so much *extrasensory* perception, but *any* kind of perception or actual awareness. When they touch upon the problem, behaviorists and physicalists vaguely talk of the cerebral cortex or the reticular formation as “generating” consciousness, in much the same terms as they might use of the liver generating bile or bodily metabolism generating heat. Yet, not the slightest attempt is made to explain how this could happen or to put forward a theory as to the nature of the remarkable psychophysical process which is thus tacitly assumed.

Consciousness (in the sense of direct awareness) is obviously not itself a substance, nor yet a mere attribute of any of the substances or processes referred to. It is essentially a *relation*. As such, it implies two terms: a cognizing subject and an object cognized. Indeed, I would go further and say that (as the evidence of recent parapsychological research seems to demonstrate) it involves a *mutual interaction* between the subject or knower-agent, on the one hand, and the object known, on the other. The “subject” must be something relatively permanent, since it not only knows, but

remembers what it has known; it might be a substance of some sort—a material brain, or, as I should hold, an immaterial mind. The “object” may be a material substance, a physical or sensory quality of some material substance, a physical event or situation; but it may also be something immaterial—the state of someone’s mind, or a logical scheme, or one of those elusive types of order which are technically known as values, for example, beauty.

Now both the supporters and the critics of parapsychology still appear to think and talk in terms of the old atomistic and sensorial type of psychology, as though the only things of which we are immediately aware consisted of sense data (or the equivalent imagery): *Nihil est in intellectu quod non prius in sensu*. The current custom of including all forms of paranormal experience under the wide umbrella of “extrasensory perception” seems tacitly to imply the same restrictive starting-point and thereby makes the phenomena reported sound far more odd and paradoxical than they really are. But, so far as my own limited investigations go, it would appear that, both in paranormal experiences and in mystical experiences (which in my view belong to the same category), concrete sensory experiences—visions, voices, and the like—form the exception rather than the rule. And when they do occur, they appear to result from the same mechanism which psychoanalysts have demonstrated in the case of dreams; namely, the conversion of the real or “latent” content into a hallucinatory or “manifest” content. The real contents usually have the character, not of extrasensory *percepts*, but of intuitions, hunches, feelings, of half-unconscious moods, or imageless thoughts, or even at times just an impulse to do this or say that. And all these of course are, by their very nature, “extrasensory.”

I once had a Chinese student who claimed that his fellow lodger (an English student with whom he had formed a close friendship, but who knew no Chinese) could usually read his thoughts. His claim did not stand up to laboratory tests; but it suggests a research that deserves a systematic trial. Let us imagine a survey, similar to Dr. Soal’s at University College, carried out by means of tests among pairs consisting each of (a) a foreign arrival virtually ignorant of English, and (b) an English-speaking student wholly

ignorant of the foreigner's language. Having discovered pairs who are apparently in telepathic rapport, let the agent at certain pre-arranged times think of certain abstract problems or statements which cannot be expressed in concrete or numerical form, and let the recipient write down what comes into his mind at the times prescribed. The obvious precautions should be taken to exclude, so far as possible, explanations in terms of clairvoyance or precognition: (e.g., the foreigner's thought should not, even during subsequent comparison, be translated back into the recipient's language, and his "thought" should be one selected at random from a large and miscellaneous series). If a plausible degree of success is obtained, then, so it would seem, any physical mode of transmission would be completely ruled out.

In cases of clairvoyance or of precognition the actual situation cognized is nearly always concrete and therefore physical, not something abstract or purely immaterial. Hence, at any rate in theory, physical transmission is conceivable; but even so, I believe, the content transmitted is not itself of sensory nature. If therefore I am right in this interpretation of extrasensory perception, it clearly becomes incumbent on the general psychologist to re-examine the whole problem of sense perception in its ordinary or normal form. One of the reasons which Watson gave for abandoning introspection was the inability of introspective psychologists to agree about the importance of sensory contents in processes of abstract thought. But what I wish now to question is their importance even in so-called sense perception. Today, among those writers who still rely partly on the results of introspection, the prevailing view is that which commonly goes by the name of "the sense-datum theory." Prof. Broad,⁴ who is its foremost and clearest exponent, applies it even to the process of clairvoyance (2, pp. 37-45). In my view, as I have argued elsewhere (5), the sense-datum theory is plausible only in the analysis of abnormal or artificial situations. In normal sense perception, as it occurs in our everyday experience, our cognitive awareness is seldom fixed primarily on the sensory qualities

⁴ Broad does indeed briefly consider the possibility of the alternative theory: "clairvoyance as non-sensuous prehension of physical objects"; but he maintains that "as soon as we consider it in detail, it becomes less and less intelligible."

themselves, since these vary widely with distance, illumination, angle of vision, and other irrelevant conditions; it goes straight to the object, or rather to the meaning of what is perceived, whether object, event, or situation. And the meaning (if I may trust my own introspection) approximates more closely to an "imageless thought" than to any sense-datum. Consider Ward's favorite example, the perception of a cannon ball: as he rightly points out, "what we directly apprehend is a solid, heavy, globular object." This cannot possibly be interpreted as a visual "sensum"; it is only the psychologist, who, after an effort of reflective analysis, decides that what is "immediately given" is "a flat, grey, circular patch, darker towards one edge, appearing as a differentiation of the percipient's private visual field"—a differentiation which, so we implicitly infer, must be the indirect effect of an external object.⁵

I am therefore tempted to propose a kind of interpretative *volte-face*. Instead of trying to explain extrasensory perception by analogy with ordinary perception, as described in the stock textbooks, we ought, I suggest, to interpret ordinary perception in the light of what we have learned about ESP. Parapsychology appears fully to confirm the view upheld by Bergson, James, Eccles, and others—that the brain is (in Sherrington's pregnant phrase) simply "an organ of liaison between mind and the physical world." And what I call my mind seems to have, as its most distinctive property, a capacity for *clairvoyance*. By clairvoyance I mean the *direct* apprehension of some object, situation, or event; that is, an apprehension which is not mediated (though it may be limited or qualified) by the physical processes taking place in my sense organs and nervous system. This, so I would maintain, is the normal basic form of the cognitive relation, not a paranormal or exceptional form. It is in any case a correct first-hand description of the ordinary experience of perception; and those who maintain that it is misleading

⁵ Broad supposes that what the clairvoyant would apprehend in the "non-sensuous prehension" of a physical object would be "a swarm of very small colorless electric charges in very rapid rhythmic motion [which causes it to reflect certain light-waves]; for, according to the best information . . . this or something like this is what the [object] most probably is." I should rather say that "this or something like this" is merely the contemporary physicist's hypothetical description of those abstract aspects of the total object which are his immediate concern.

or scientifically untenable can only do so by insisting that our everyday experiences are in fact illusory.⁶ If we accept this description of our ordinary cognitions, then we must also recognize that these too are at times transspatial, transtemporal, transphysical, and (I am inclined to think) transpersonal; and that in turn would imply that, even in normal psychology, the limiting conditions of distance, time, physical causation, and even personal identity, are far less important than is commonly assumed: they are merely the incidental consequences of our biological evolution.

The material brain, with its accessory mechanisms of sense organisms and sensory nerves, has been evolved, not to generate consciousness—a feat which no mere physico-chemical structure could possibly accomplish—but rather to transmit, and at the same time limit and direct, the mind's unique power of clairvoyance so that, under ordinary mundane conditions, they are selectively concentrated on the objects or situations—or those aspects of them—which are of vital importance for the survival of the physical organism and of the species to which it belongs. When for the time being these practical requirements are ensured, then the wider range of our clairvoyant powers becomes manifest, as for example in the deeper insight of the poet, the artist, or the mystic who sees "the earth and every common object . . . apparelled in celestial light," "glowing with an intrinsic meaning and a glamour of their own." And there is the familiar danger that, if he becomes too much absorbed in these profounder aspects at the cost of the superficial and the practical, he may turn into an absent-minded visionary: like Thales gazing at the stars, he falls into the well. Nor should it surprise us to find that the most striking instances of paranormal activity generally occur when the brain itself is in some more or less abnormal state, as in dreams and various drowsy conditions, in mediumistic and hypnotic trances, or under the influence of so-

⁶ Should some readers feel that the form of words adopted in my definition implies a mode of naive realism which they cannot accept, then they can, if they wish, regard the object cognized as an object or content of consciousness and not a material object. In that case I would only repeat that the content, even in ordinary perception, is more like a thought than a sensum. It would be out of place to discuss the metaphysics of the problem here; and I myself would hold that the difference between us is a difference, not so much in our view of the facts, but rather in the language we use in describing the facts.

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called psychogenic drugs, or in a condition of high emotional tension—states which involve some degree of partial dissociation.⁷

If this general view be accepted, then it would seem to follow that the various types of paranormal cognition which I enumerated at the outset are really manifestations of one and the same fundamental process. When the event veridically cognized is a future event, we speak of precognition; when it is a past event, we speak of retrocognition; when it is a contemporary event in someone else's mind, we speak of telepathy; and when it is a contemporary physical event, of clairvoyance in the narrower etymological sense (something clearly and directly seen without the instrumentality of our peripheral organs of vision).⁸ Thus, as I suggested in an earlier statistical review (3, p. 78), there would seem to be "a definite 'group factor' underlying all the different paranormal manifestations." Our attempts at confirming this corollary have not, it must be admitted, been very successful. Following the surveys carried out at University College, we selected a batch of 35 students, and applied tests for all the stock types of paranormal activity, supplementing them by a questionnaire on spontaneous experiences, mystical or semi-mystical as well as paranormal. Practically all the correlations between the scores were positive, with clairvoyance and precognition heading the factor-loadings; there was thus some ostensible evidence for a general factor covering not only the various paranormal processes (including psychokinesis) but also certain experiences that would ordinarily be classed as normal. This, if accepted, would imply that so-called paranormal processes do not

⁷To avoid misunderstanding, let me add that I am not suggesting that a state of partial dissociation is a sole or sufficient condition, or even that (as some writers have assumed) it is a necessary condition. The frequency distribution of so-called paranormal powers appears to conform, not with a normal but a J-shaped curve; and that would seem to imply, as I have argued elsewhere (3, pp. 77 f.), that there are or may be a plurality of conditions involved, and that these conditions are not additive (as in the case of the more familiar cognitive abilities), but multiplicative (as in cases where motivation and various environmental circumstances combine to influence the results achieved).

⁸To most general psychologists, Dr. J. B. Rhine is chiefly known as the investigator responsible for the first notable breakthrough in the field of psychical research by the systematic application of modern experimental and statistical techniques. I would hold that almost equally important was his demonstration that "telepathy and clairvoyance are essentially the same ability" (15, p. 47). Indeed, it was to stress this virtual identity that the familiar phrase "extrasensory perception" was originally coined.

form a self-contained group of phenomena to be studied in isolation as something *sui generis*; after all, paranormal performances are subject to much the same influences as ordinary normal behavior—interest, fatigue, drugs, incentives, emotion, mood, and differences in personality both genetic and acquired. Unfortunately, however, the reliabilities in our experiments were much too low, and the probable errors much too high, for us to be sure that any of the individuals really possessed demonstrable paranormal powers. Here, as elsewhere, the real difficulty is to secure subjects who can clearly exhibit and sustain a run of successes sufficient to be accepted as trustworthy evidence. Nevertheless, I venture to think this might prove a line of research well worth following.

So far in this paper I have emphasized what I have called the epistemological problem; and in doing so I may perhaps appear to have adopted an exclusively intellectualist approach. Let me therefore add that I regard cognition as merely one aspect of the total conscious process. All psychical processes, whether normal or paranormal, conscious or unconscious, include an affective or evaluative aspect and a conative or kinetic aspect, as well as the purely cognitive aspect. Thus, as I have already argued, psychical processes, like physical processes, have the character of interactions. In telepathy, for example, the so-called "recipient" is not just passively receptive; he is, or he may be, as much an agent in the total process as the person who is conventionally called the "agent." And the process itself is a kind of two-way activity. If, as I suggested above, Eccles' theory of ordinary consciousness involves a kind of psychokinetic activity between the individual's mind and his brain, then in cases of telepathic consciousness, as we have seen, it is natural to suppose that the agent's mind exercises a kind of psychokinetic activity on the recipient's brain. But equally, if the recipient's brain functions as a "detector," it must in turn be active.

All this, of course, assumes that we are willing to postulate mental entities or agents in addition to physical ones. But if modern physicists are now ready to postulate nuclear types of interaction which are irreducible to mechanical interactions and which were wholly unrecognized by nineteenth-century scientists, there can be no longer any objection to the psychologists' postulating psychical

types of interactions which are unrecognized in other branches of contemporary science. This may seem to commit us to a dualism of sorts; but it is a dualism within a unitary system. Indeed, what I am advocating is not so much a dualism (in the old Cartesian sense) as a hierarchy of categories at different levels of existence. Here, however, I need labor the point no further, since I have set forth the evidence and arguments in detail elsewhere (4, pp. 166 f.).

What precisely may be the nature of these various interactions can best be determined if we revive the unfashionable method of trained introspection. The relations or interrelations involved in all psychical processes are admittedly elusive. But for that there are obvious biological reasons. Quick and efficient action requires us to attend to the contents of our consciousness rather than to the process. Hence consciousness itself has to be as transparent as a glass window; and the underlying process therefore, more often than not, may be almost wholly unconscious. It is only under exceptional or artificial conditions that we divert our attention to the process of cognition. We are then able, not merely to perceive, but to perceive *that* we perceive, and often, with a little effort, to perceive *how* we perceive. Any such self-scrutiny, however, demands some degree of practice and training, not only in techniques of introspection amounting almost to a kind of psychoanalysis, but also in the ability to describe these obscure and evasive processes in apt and articulate language.

Recent investigations along these lines have shown, I think, how much the parapsychologist may learn both from contemporary and from traditional psychology. But equally, I maintain, the general psychologist has much to learn from the methods and conclusions of parapsychology. As regards method, the brilliant researches carried out by Dr. Rhine and his band of co-workers have demonstrated how some of the most ancient and obstinate types of problem, too often dismissed as insoluble or metaphysical, will yield to the patient application of appropriate experimental and statistical procedures. As regards conclusions, many of them, as I have tried to show, shed a flood of light on some of the more puzzling issues of current psychology, particularly those of perception, both sensory and non-sensory. But of all the many implications I have touched

upon, by far the most important is the bearing of the results achieved on the whole outlook of general psychology. Behaviorism and psychoanalysis in their early days embodied a wholesome reaction against a too exclusive preoccupation with the introspective analysis of consciousness in its more superficial forms. Unfortunately, each school ended by converting its methodological postulates into what was virtually a set of metaphysical dogmas: behaviorism found itself committed to a crude and naïve brand of materialism, and psychoanalysis to an equally crude brand of determinism. Psychical processes and psychical phenomena—the very crux of psychology as a separate branch of science—were either bluntly denied or blandly dismissed as of no scientific importance. And today general psychology finds itself hammering away at the dead end of a blind alley. As a basis for practical action in the fields of education, industry, psychiatry, criminology, and the complex social and ethical problems of the present day, it has proved itself, not merely useless, but in many respects positively harmful. It is scarcely too much to say that at the moment the most fruitful investigations in the field of psychology are those that are being undertaken, not by psychologists, but by physicists, neurologists, pharmacologists, sociologists, and educationists—investigators who feel no compulsion to reject concepts and hypotheses that make free use of such categories as mind and consciousness. Among philosophers, the logical positivists still reiterate the old armchair objection that psychical concepts are by their very nature unverifiable. Meanwhile, parapsychology, so we may fairly claim, has succeeded in verifying them, at least as far as any of the basic categories of science can ever be verified. As Gardner Murphy has put it: "The ESP hypothesis has been tested . . . and the hypothesis is supported. Is there any other hypothesis today in competition with it? Only, so far as I know, the hypothesis of fraud" (13, p. 42). And as we have seen, almost exactly the same alternatives have been laid down by our contemporary critics.

The main implication of parapsychology for general psychology can therefore be condensed into a syllogism. "ESP," we are told, "is a phenomenon which ought not to occur if the physicalist's assumptions are sound and if behaviorism is the whole truth, and

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nothing but the truth." But ESP does occur. Therefore behaviorism is not the whole truth, and the physicalist's *Weltbild* collapses. Even if the general psychologist still feels that ESP is not yet absolutely established as an incontrovertible fact, the probabilities in its favor are nevertheless so high that he is in fairness bound to keep an open mind on all these basic issues and to take a closer and impartial look at the data available. That being so, the parapsychologist and the general psychologist should now link hands and press forward with joint and co-operative researches into the essential "Nature of Man" (16).

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